REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in view of the following discussion, is respectfully requested.

Claims 1-36 are pending. The present amendment amends Claims 25-35 and adds new Claim 36. Support for the changes to the claims is found in the originally filed claims and in Figure 2, for example. Thus, the changes are not believed to raise an issue of new matter.

In the outstanding Office Action, Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi in view of Chandran, and Claim 35 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi in view of Chandran. Applicant respectfully traverses these rejections on the grounds that Claims 25 and 35, when considered as a whole, are neither anticipated by nor obvious over the applied references.

As amended, Claims 25 and 35 each define "performing a spectral subtraction on a signal corresponding to a spectrum of said input signal, using said controlled first perceptual weight" and "a spectral amplitude suppression using said controlled second perceptual weight about another signal corresponding to the spectrum of said input signal." The Takahashi reference discloses an amplitude spectrum subtracter 34 in Figure 4, and the Chandran reference discloses in Figure 2 an attenuation unit 208 that attenuates the magnitude of the complex frequency domain elements of a signal based on the overall signal-to-noise ratio estimated in the SNR estimator 114. Chandran, col. 1, line 65 – col. 2, line 3; col. 2, lines 35-44.

However, neither Takahashi nor Chandran discloses ***both*** "performing a spectral subtraction on a signal corresponding to a spectrum of said input signal, using said controlled first perceptual weight" ***and*** "a spectral amplitude suppression using said controlled second perceptual weight about another signal corresponding to the spectrum of said input signal," as

recited in Claims 25 and 35. Specifically, Takahashi does not even disclose the claimed spectral amplitude suppression, and Chandran et al. merely performs gain computation and multiplication of the power measurements for each band, as computed by the signal power and noise estimator 106 in Figure 2.

The outstanding Office Action attempts to address these deficiencies of Takahashi and Chandran et al. by stating that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second perceptual weight for controlling a spectral amplitude suppression to achieve an improved overall perceived quality signal." Office Action, ¶ 3. Applicant respectfully submits that this was ***not*** obvious at the time the invention was made. At the time the invention was made, spectral subtraction and spectral amplitude suppression were known methods of suppressing noise. *See* Specification, p. 1. However, both of these techniques have undesirable side effects. Namely, spectral subtraction can generate undesirable musical noise, and spectral amplitude suppression can undesirably transform the waveform of the input speech signal. *See id.* at 6, 7, 22-24. The inventor of the present invention discovered that, by combining spectral subtraction and spectral amplitude suppression, the undesirable side-effects of both techniques can be reduced. *Id.* at 22-24.

Outside of the present disclosure, there is no motivation for combining both spectral subtraction and spectral amplitude suppression in a single device. Neither Takahashi nor Chandran et al. suggests that spectral subtraction and spectral amplitude suppression, when used together, could avoid the problem of musical noise that results from spectral subtraction and the problem of waveform transformation that results from spectral amplitude suppression. Such motivation is only found in the present disclosure, which is an improper, hindsight basis for combining prior art references. As such, one of ordinary skill in the art, at the time of the invention, would ***not*** have been motivated to combine the teachings of

Takahashi and Chandran et al. to arrive at the invention of claims 25 and 35. Claims 25 and 35 both recite "performing a spectral subtraction on a signal corresponding to a spectrum of said input signal, using said controlled first perceptual weight" and "a spectral amplitude suppression using said controlled second perceptual weight about another signal corresponding to the spectrum of said input signal." The fact that Takahashi and Chandran et al. disclose separate techniques for reducing noise does not make it obvious to one of ordinary skill in the art to use both noise reduction techniques in the same device. Not only do the applied references fail to suggest how spectral subtraction and spectral amplitude suppression could possibly be combined in a single device, they do not even suggest that it would be desirable to do so.

Accordingly, the applied references, when considered alone or in any proper combination, are not believed to anticipate or make obvious the inventions of Claims 25 and 35. Therefore, independent Claim 25 and independent Claim 35 are patentably distinguishable from the applied references. Additionally, new independent claim 36, directed to a noise suppression device, is patentably distinguishable from the applied references for at least the same reasons as Claims 25 and 35.

In view of the foregoing discussion, no further issues are believed to be outstanding in the present application. Therefore, Applicant requests that the present application be allowed and be passed to issue.

Respectfully submitted,

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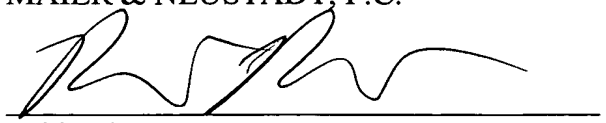

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